CALIFORNIA FARM BUREAU FEDERATION
NATURAL RESOURCES AND ENVIRONMENTAL DEPARTMENT
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Sent via E-Mail
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January 28, 2011

Delta Stewardship Council
980 Ninth Street, Suite 1500
Sacramento, CA 95814

Re: **Supplemental Comments on Delta Watermaster Report to the State Water Resources Control Board and Delta Stewardship Council Concerning "The Reasonable Use Doctrine & Agricultural Water Use Efficiency"**

Dear Council Members:

The California Farm Bureau Federation is a non-governmental, non-profit, voluntary membership California corporation whose purpose is to protect and promote agricultural interests throughout the state of California and to find solutions to the problems of the farm, the farm home and the rural community. Farm Bureau is California's largest farm organization, comprised of 53 county Farm Bureaus currently representing approximately 76,500 members in 56 counties. Farm Bureau strives to protect and improve the ability of farmers and ranchers engaged in production agriculture to provide a reliable supply of food and fiber through responsible stewardship of California's resources.

These comments regarding the Delta Watermaster's "Reasonable Use Doctrine & Agricultural Water Use Efficiency" report, formally presented to the Delta Stewardship Council at the Council's January 27, 2011 meeting, supplement a previous set of comments submitted to the Council on this topic on January 21, 2011. While those comments focused on some broad legal and policy issues concerning the "Reasonable Use" Report, these comments focus on details of the agricultural water use efficiency package passed during the 2009-2010 7th Extraordinary Session as Senate Bill No. 7, as well as certain technical and factual particulars related generally to the current potential agricultural water use efficiency as one of several important water management tools.

I. Senate Bill No. 7 (2009-2010 7th Ex. Sess.) Is a Major Step Forward and Should Be Given Time to Work

The agricultural water management portions of the water conservation bill passed in the fall of 2009 as Senate Bill No. 7 (Steinberg, Sen. Bill No. 7, 2009-2010 7th Ex. Sess., hereinafter "SB

7X 7")[1] requires agricultural water suppliers throughout California to implement certain "critical" and "locally cost-effective" "additional" "efficient water management practices" by July 31, 2012.[2] An "agricultural water supplier" is a water supplier providing water to "10,000 or more irrigated acres."[3] "Locally cost effective" efficient water management practices are practices that "present value" of which local benefits are greater than or equal to "the present value of the local cost of implementing [such practices]."[4]

SB 7X 7 directs the Department of Water Resources ("DWR") to work "in consultation with the Agricultural Water Management Council, academic experts, and other stakeholders" to develop a "methodology for quantifying the efficiency of agricultural water use." Among other things to be considered in connection with this proposed methodology, DWR may consider methodologies to determine "efficiency levels based on crop type or irrigation system distribution uniformity," as well as "estimated implementation costs and the types of data needed to support the methodology."[5]

By December 31, 2011 (with regular updates to follow by December 31, 2015 and every five years thereafter), SB 7X 7 requires each agricultural water supplier to adopt and implement agricultural water management plans to include, among other things, water delivery measurements or calculations, a description of previous water management activities, and details regarding implementation of the efficient water management practices required by July 31, 2012.[6]

All agricultural water suppliers serving 25,000 acres or more must submit such a plan by the date identified. Agricultural water suppliers serving 10,000 or more acres, but less than 25,000 acres need prepare an agricultural water management plan only if such suppliers have been provided with sufficient funding for this purpose. However, as noted, all agricultural water suppliers serving 10,000 acres or more must implement required and "additional" locally cost-effective efficient water management practices by July 31, 2012 and provide, on a standardized form to be developed, information "sufficient to assess […] compliance" with the efficient water management practices provision of SB 7X 7.[7]

Contrary to the Delta Watermaster's criticism of the 10,000 and 25,000 acre thresholds in SB 7X 7,[8] according to the Agricultural Water Management Council, based on 2005 data, agricultural water suppliers with 10,000 irrigated acres or more collectively serve <u>95 percent</u> of the more than 6 million irrigated acres served by water districts statewide, while suppliers serving 25,000 irrigated acres or more represent <u>more than 80 percent</u> of the same area. It is therefore inaccurate and misleading to suggest that required agricultural water efficiency reporting, measurement, planning, and implementation under SB 7X 7 does not cover the lion's

[1] See pertinent excerpts attached.
[2] Water Code, § 10608.48.
[3] Water Code, § 10608.12, subd. (a).
[4] Water Code, § 10608.12, subd. (k).
[5] Water Code, § 10608.64.
[6] Water Code, § 10826.
[7] Water Code, § 10608.48, 10608.52, 10853
[8] See "Reasonable Use" Report at 15.

share of agricultural water use in the Central Valley, as well as the total area of land irrigated by water districts in California.

As for the current tiered thresholds controlling (1) mandatory agricultural water management plan preparation for suppliers over 25,000 acres, (2) management plans where adequate funding is available for suppliers 10,000 acres and up, (3) straight reporting and implementation where there is no funding, and (4) simple statements of annual diversion for individual diverters and a small minority of suppliers under 10,000 acres, objectively viewed these thresholds are in fact a logically and appropriate function of both the magnitude of the water use of these different users and their economic ability to plan and comply with the law. In any case, given limited resources and the considerable representative coverage of the various tiers, the current approach is certainly an appropriate incremental step.

As a result of past efforts under a 1990 Agricultural Water Management Council MOU (implementing AB 3616, the Efficient Water Management Practices Act of 1990) and of certain water conservation planning requirements imposed on Central Valley Project contractors under the 1990 Central Valley Project Improvement Act (CVPIA), most agricultural water suppliers serving 10,000 acres or more (again, representing some 95 percent of total irrigated acreage served by water districts in the state) are in fact already in compliance with the core requirements of SB 7X 7.[9] ***Nonetheless, the formidable task of complying with additional requirements of SB 7X 7 will, between now and mid- to late 2012, absorb all of these agencies' available resources (and more) in the area of agricultural water use efficiency.*** Thus, to review**:**

1. Agricultural water suppliers will have to prepare or update existing agricultural water management plans to conform to the specific requirements of SB 7X 7 and implement additional "locally cost-effective" efficient water management practices, or otherwise submit documentation in support of a determination that such additional practices are not "locally cost-effective" at the time of reporting.[10]

2. As noted, agricultural stakeholders must engage in a stakeholder process with DWR to develop a proposed agricultural water efficiency methodology. Additionally, SB 7X 7 makes mandatory certain previously conditional, albeit already widely implemented efficient water management practices (volumetric pricing and "aggregated farm-gate delivery data").[11]

3. SB 7X 7 requires conformance to a new standardized reporting form, coordination with other local agencies, and public dissemination of agricultural water management plans.

4. Furthermore, all of this comes at the time when agricultural water suppliers are simultaneously striving to comply with additional new requirements in the 2009 Delta

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[9] See "Efficient Water Management Irrigation District Achievements," Agricultural Water Management Council, 2009 (http://www.agwatercouncil.org/Publications/Efficient-Water-Management-irrigation-district-achievements/menu-id-86.html); "San Joaquin Valley Irrigation Practices and Influencers Survey Findings," Agricultural Water Management Council and Farm Water Coalition (http://www.agwatercouncil.org/08312010.pdf).

[10] Water Code, § 10608.48, subd. (d).

[11] See Water Code, § 10608.48, subd. (b); § 531.10; List C, Efficient Water Management Practices, Memorandum of Understanding regarding Efficient Water Management Practices by Agricultural Water Suppliers in California, January 1, 1999 (http://www.agwatercouncil.org/images/stories/pdfs/awmcmou. pdf)

Reform Package, including new mandatory statements of water diversion requirements and new statewide groundwater monitoring and reporting responsibilities.

As the result of a very inclusive and exhaustive public stakeholder process including actual farmers and agricultural interests as well as members of the environmental community and others, *SB 7X 7* ***represents the best and most appropriate compromise currently possible.*** Implementation of the measures required under SB 7X 7 by agricultural water suppliers around the state will undoubtedly amount to an enormous step forward. Accordingly, ***we should not now rush to judgment; rather, the State of California should allow the legislation to work, without premature regulatory interference and second-guessing.***

II. Past Gains in Agricultural Water Use Efficiency in California Have Been Remarkable

Despite dwindling water supplies, an increasingly difficult regulatory environment, and loss of acreage statewide, California farmers have invested hundreds of million of dollars to achieve more "crop per drop" of water applied. For example, it is estimated that between 2003 and 2008, growers in the San Joaquin Valley invested over $1.5 billion dollars in high-efficiency irrigation equipment, infrastructure, and technology.[12] According to DWR's recently released 2009 California Water Plan Update, agricultural water use statewide ("crop applied water use") has fallen 14.6 percent over the last 40 years (1967-2007), from 31.2 million acre-feet to an estimated 26.7 million acre-feet in 2007.[13] Despite this reduction in total applied water use, however, DWR estimates that "real, inflation-adjusted gross revenue" for California agricultural products during the same time period increased 84 percent, from $19.9 billion in 1967 to $36.6 billion in 2007.[14]

III. Required Levels of Investment above Readily Implementable "Locally Cost-Effective" Efficiency Measures That Would Be Necessary to Realize Aggressive Projections of Potential Water Savings Are *Not Realistic*, and Probably *Not Feasible*

As illustrated in the bar graphs appended hereto, showing the shift in recent decades from less efficient to more efficient irrigation methods for many crops appended,[15] and as further evidenced by the impressive statistics highlighted at the beginning of these supplemental comments,[16] farmers have invested hundred's of millions of dollars in locally cost-effective and technically feasible water efficient improvements, with dramatic results. At the same time,

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[12] Source identified as California Farm Water Coalition per DWR California Water Plan Update 2009, Volume 2, Resource Management Strategies, Chapter 2, Agricultural Water Efficiency, p. 2-12.

[13] Attachment 6: Department of Water Resources, California Water Plan Update 2009, Volume 1, Strategic Plan, Chapter 4, "California Water Today," page 4-13, "Comparing Changes in Applied Water Use and the Real Gross Value of Output for California Agriculture: 1967 to 2007."

[14] Ibid.

[15] See attached. California Water Plan, Update 2009, Volume 4 Reference Guide: "Survey of Irrigation Methods in California in 2001," Figure 4. Comparison of irrigated land by micro/drip irrigation by various crops from 1972, 1980, 1991, and 2001; Figure 5. Comparison of irrigated land by high-pressure sprinkler by various crops from 1972, 1980, 1991, and 2001; Figure 6. Comparison of irrigated land by gravity-driven surface irrigation by various crops from 1972, 1980, 1991, and 2001.

[16] See Section II, *supra*.

however, there is an upward limit on the potential gains to be had from further implementation of readily implementable "locally cost-effective" and "technically feasible" efficient water management practices. Additional gains beyond what has been achieved already are achievable only with much more intensive, capital investments in delivery systems (e.g., canal lining, recycled water, regulatory reservoirs, pipe distribution systems, regulatory reservoirs, and automatic control structures).[17]

Given the significant up-front expense of many such improvements, however, ***the primary limitation on the implementation of such measures is that they are simply not "locally cost-effective."*** This, in fact, is one of the primary reasons why *extremely aggressive projections* ***of potential agricultural water efficiency savings ignore stubborn on-the-ground realities.***[18]

Without belaboring the point unduly, we would merely direct the Stewardship's Council to a number of figures found in the Agricultural Water Efficiency Chapter of the Department of Water Resources' recent 2009 Update of the California Water Plan Update (also attached hereto). Depicting the differing levels of private and public investment required to achieve differing levels of water savings, several of these graphics are derived from the CALFED Bay-Delta Program's 2006 Water Use Efficiency Comprehensive Evaluation, as the most ambitious and comprehensive study of its kind yet completed to date.

According to the CALFED estimates (which have been since endorsed and incorporated by DWR in the 2009 Water Plan Update), public or other outside investment required to achieve various levels of water conservation, over and above the amount of water which may be conserved by means of naturally occurring private investment in "locally cost-effective" measures alone, ranges from $3 million to $500 million a year.[19] The cost of water savings at the higher levels of water use efficiency that are popularly (but erroneously) assumed to be readily feasible, however, is in fact exponentially higher than recent historic levels of investment, while truly significant savings on a statewide level are not expected at levels of investment of less than $150 to $500 million a year over the next twenty years—or an average cost of somewhere between $250 and $580 dollars an acre foot.[20] In contrast, projected water savings at recent historic rates of outside investment are *much* lower,[21] while if we refer to another more familiar

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[17] In addition, it should noted that not all crops are amenable to supposed panaceas of drip and micro-irrigation (essentially, trees, vines, and some vegetables only) or regulatory deficit irrigation (trees and vines only).

[18] Other reasons such estimates are simply not realistic include their tendency to ignore downstream and in-basin use, overlook regional differences, differing crops types and agronomic practices, and double or accumulate assumed savings across different categories of efficiency measures, among other over-simplification and accuracies. See Burt, et al., Oct. 2008, "Agricultural Water Conservation and Efficiency in California—A Commentary," http://www.itrc.org/papers/commentary/commentary.pdf.

[19] California Water Plan, Update 2009, Chapter 2—Agricultural Water use Efficiency, Table 2-2 ("On-farm and water supplier recoverable and irrecoverable flow reductions"); Figure 2-2 ("Investment levels and associated reduction of irrecoverable flows anticipated from state/federal agencies").

[20] California Water Plan, Update 2009, Chapter 2—Agricultural Water use Efficiency, Table 2-2 ("On-farm and water supplier recoverable and irrecoverable flow reductions"); Figure 2-2 ("Investment levels and associated reduction of irrecoverable flows anticipated from state/federal agencies"); Figure 2-1 ("Average and incremental cost per acre-foot of irrecoverable loss reduction").

[21] On average just $3 million a year. (See California Water Plan, Update 2009, Chapter 2—Agricultural Water use Efficiency, Table 2-3, "Projects funded through water use efficiency grant cycles.")

Water Plan bar chart, [22] we also see that the range of potential savings from other sources, including urban water use efficiency, recycled municipal water, and conjunctive management and groundwater storage, is much higher and much more certainly achievable.

IV. A Balanced Water Portfolio for the 21st Century, Includes Not Only Increased Water Use Efficiency, But Also Additional Storage and Improved Conveyance

More, and not less, capacity and flexibility to capture, store, release, and convey water will be critically important to sustainably meet competing demands on limited water resources in the 21st century. This is not an either-or proposition; it is a dual necessity (and, indeed, something very much implicit in the "co-equal goals" concept that is the Stewardship Council's charge). Thus, ***while increased water efficiency is necessary, so too are additional storage, improved conveyance, and greater regulatory certainty.*** While the former can potentially help to address current and future demand imbalances, the latter provide absolutely essential flexibility to manage our existing supplies that cannot be had in any other way. In fact, it is paradoxical, but true, that if we truly desire to rehabilitate our rivers and fisheries, while remaining the nation's "salad bowl" and an economic engine of global import, we will need not only greater water use efficiency in all sectors, but also more storage, smarter conveyance, and much greater flexibility overall. In short, if storage, movement, and reasonable use of scarce water resources have always been essential tools in California's water management toolbox, with expected climate change alterations and large and steadily increasing urban and environmental water demand, all of these things will be more important and essential in the 21st century than ever before.

V. The Importance of Regulatory Certainty

One other critical aspect of agricultural water efficiency that is missed in the Delta Watermaster's "The Reasonable Use" report and other similar treatments of this subject[23] is ***the great importance of some relative certainty in terms of the overall stability and security of existing water rights.*** From a human behavior standpoint, this is one area where harsh command-and-control approaches produce a reverse reaction. Namely, if the prevailing legal and regulatory environment is such that agricultural or other water users are made to live in constant fear of loss or reallocation of their existing water supplies, they will be less willing to implement practices that may result in further losses of water. In this regard, ***collaborative, voluntary, market-, and incentive-based approaches (though too seldom embraced in practice) are always more effective.***

[22] California Water Plan Highlights, December 2005 at 14 ("Range of Additional Annual Water for Eight Resources Management Strategies").

[23] See, e.g., Cooley, et al., Sept. 2008, "More with Less: Agricultural Water Conservation and Efficiency in California"; Environmental Water Caucus, Revised 2d. ed., "California Water Solutions Now."

Conclusion

Farm Bureau thanks the Delta Stewardship Council for the further opportunity to comment to this important policy concern. In the interest of all Californians, we look forward to a responsible, fact-based debate on this and other topics, as the Council begins development of its Delta Plan.

Sincerely,

Justin E. Fredrickson
Environmental Policy Analyst

JEF

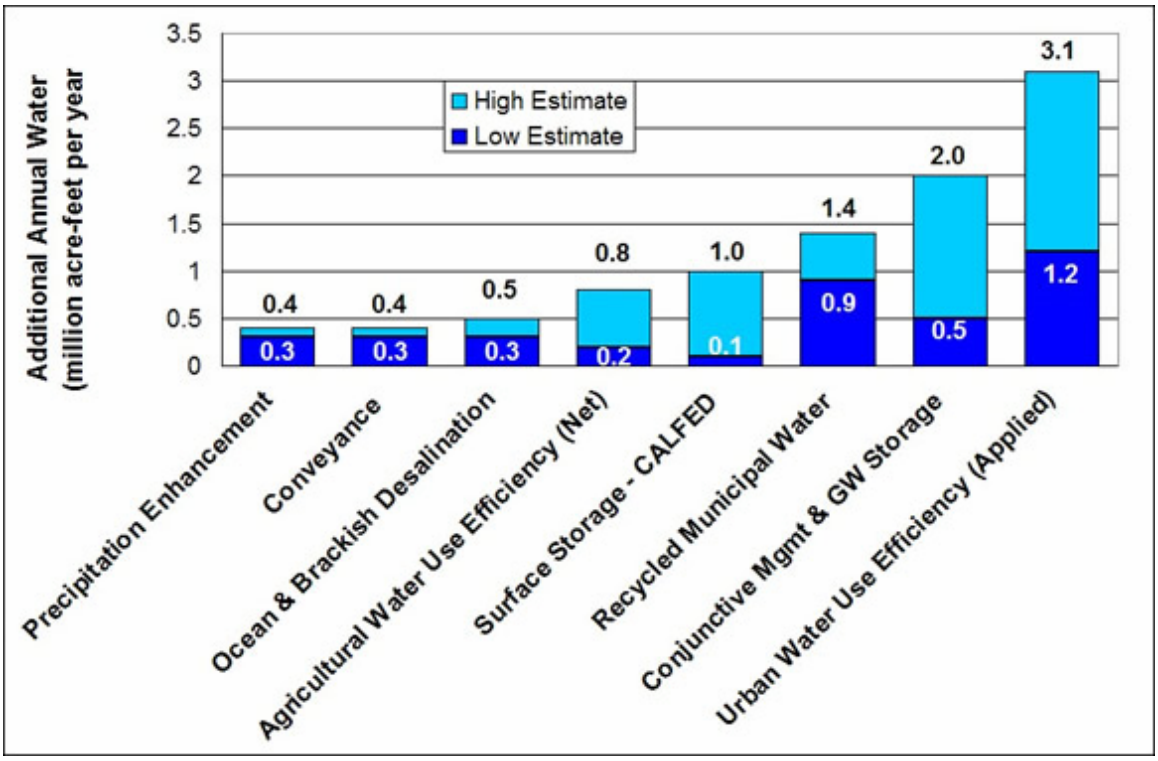
cc: Charles Hoppin, Chairman State Water Resources Control Board

ATTACHMENTS

California Water Plan Update
Tables and Excerpts

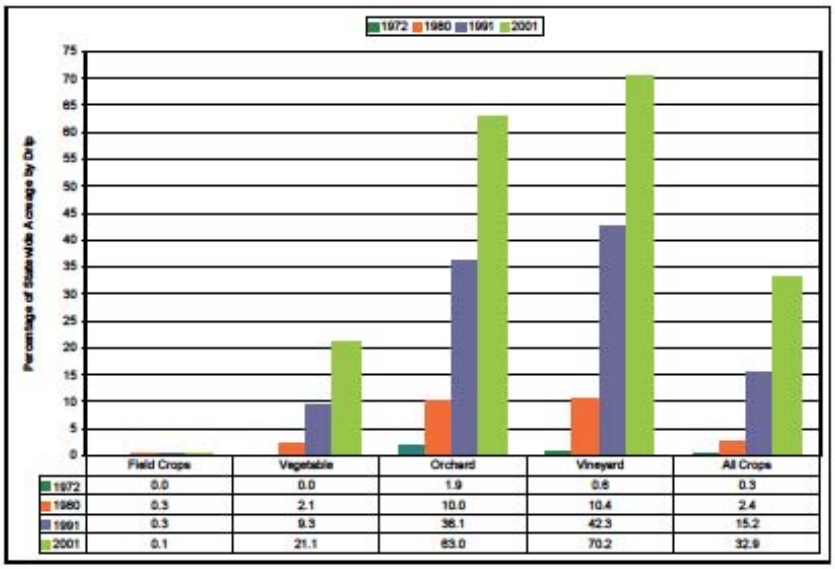
Re: Agricultural Water
Use Efficiency Potential

Source: DWR California Water Plan, Update 2005 ("Range of Additional Annual Water for Eight Resources Management Strategies")



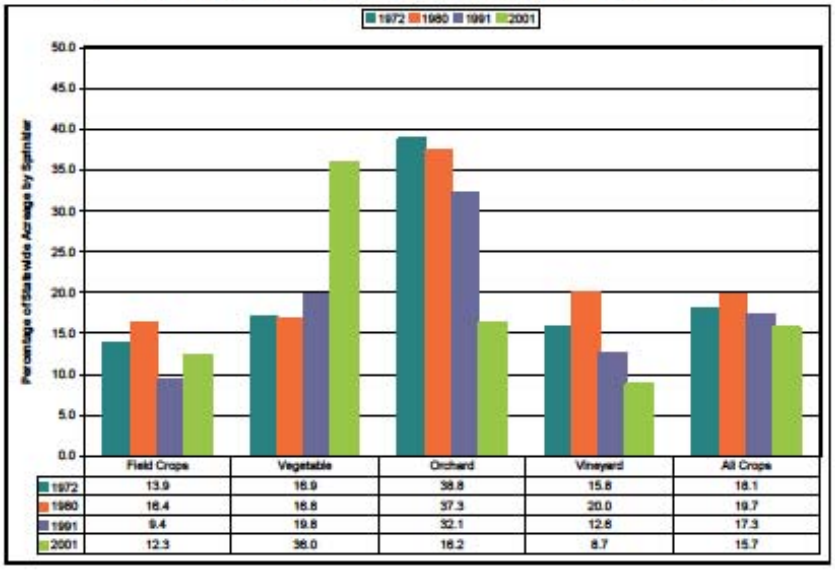
<u>Source</u>: California Water Plan, Update 2009, Volume 4 Reference Guide: "Survey of Irrigation Methods in California in 2001"

Figure 4. Comparison of irrigated land by micro/drip irrigation by various crops from 1972, 1980, 1991, and 2001



	Field Crops	Vegetable	Orchard	Vineyard	All Crops
1972	0.0	0.0	1.9	0.6	0.3
1980	0.3	2.1	10.0	10.4	2.4
1991	0.3	9.5	36.1	42.3	15.2
2001	0.1	21.1	63.0	70.2	32.9

Figure 5. Comparison of irrigated land by high-pressure sprinkler irrigation by various crops from 1972, 1980, 1991, and 2001

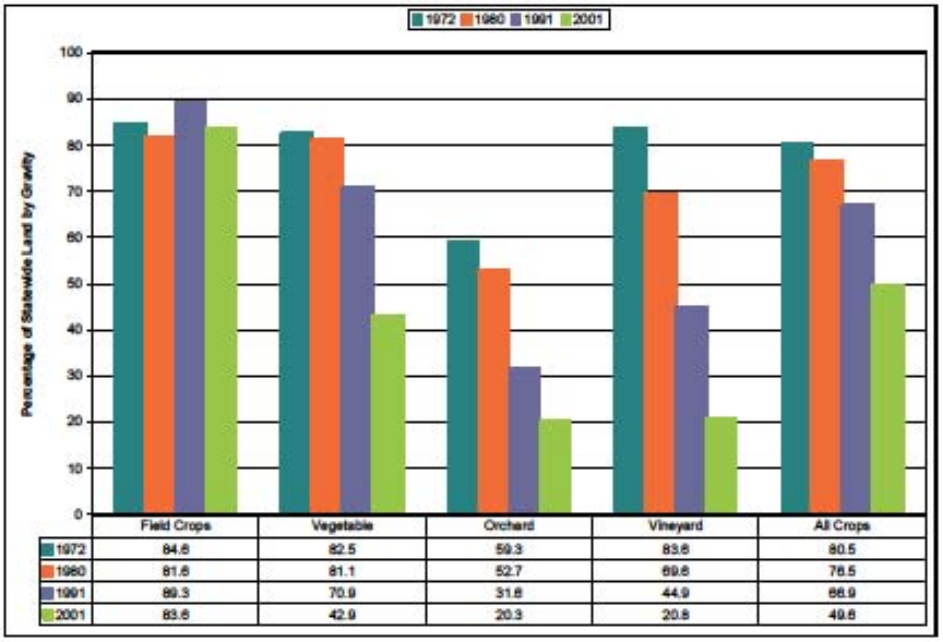


	Field Crops	Vegetable	Orchard	Vineyard	All Crops
1972	13.9	16.9	38.8	15.8	18.1
1980	16.4	16.8	37.3	20.0	19.7
1991	9.4	19.8	32.1	12.8	17.3
2001	12.3	36.0	16.2	8.7	15.7

Source: California Water Plan, Update 2009, Volume 4 Reference Guide: "Survey of Irrigation Methods in California in 2001"

The results from comparing the surveys conducted in 1972, 1980, 1991, and 2001, show that surface irrigation has declined for all crops from 80.5% in 1972 to 49.6% in 2001 (Figure 6). There has been a dramatic decrease particularly in vineyards. In 1972, approximately 82.5% of the land area planted to vegetables, 59.3% planted to orchards, and 83.6% planted to vineyards were under surface irrigation methods. In 2001, 42.8% of the vegetables, 20.3% of the orchards, and 20.8% vineyards were irrigated with surface irrigation methods. The study shows a decrease of 39.7% for vegetables, 39% for orchards, and 62.8% for vineyards.

Figure 6. Comparison of irrigated land by gravity-driven surface irrigation by various crops from 1972, 1980, 1991, and 2001



	Field Crops	Vegetable	Orchard	Vineyard	All Crops
1972	84.6	82.5	59.3	83.6	80.5
1980	81.6	81.1	52.7	69.6	76.5
1991	89.3	70.9	31.6	44.9	66.9
2001	83.6	42.9	20.3	20.8	49.6

The reductions in surface methods are due to the reductions in field crop acreages. The percentage of land area planted to orchard has increased from about 15% to 31% and acreages planted by vineyard has increased from about 6% to 16%, while the amount of land planted by fields crops has decreased from about 67% to 42% since 1972.

Table 12 displays percentage change per year of percentage of acreages irrigated by gravity, sprinkler, and drip methods for four crop categories between 1972 and 2001. There has been a large increase in drip irrigation, particularly in vineyards. The table below shows that the drip irrigation in vineyards has increased at an average rate of 2.4% per year over the period of the data sets (Table 12 and Figure 7).

Source: California Water Plan, Update 2009, Chapter 2—Agricultural Water use Efficiency

Table 2-2 On-farm and water supplier recoverable and irrecoverable flow reductions

Estimates of 2030 On-farm and District Agricultural Water Use Efficiency Potential					
Projection Level (PL)	Local Agency Investment Assumption	CALFED Grant Funding Assumption	Recoverable Flows (1,000 acre-feet/ year)	Irrecoverable Flows (1,000 acre-feet/ year)	Regulated Deficit Irrigation (1,000 acre-feet/ year)
PL-1	Historic Rate	Prop. 50 only	150	34	142
PL-2	Locally Cost-Effective	Prop. 50 only	No change in locally cost-effective rate-results same as PL-1		
PL-3	Historic Rate	Prop. 50 + $15 million/year	565	103	142
PL-4	Locally Cost-Effective	Prop. 50 + $15 million/year	No change in locally cost-effective rate-results same as PL-1		
PL-5	Locally Cost-Effective	Prop. 50 + $40 million/year (2005-14) $10 million/year (2005-30)	947	190	142
PL-150	Locally Cost-Effective	Prop. 50 $150 million/year (2006-2030	2006	620	142
PL-500	Locally Cost-Effective	Prop. 50 $500 million/year (2006-2030)	2,930	888	142

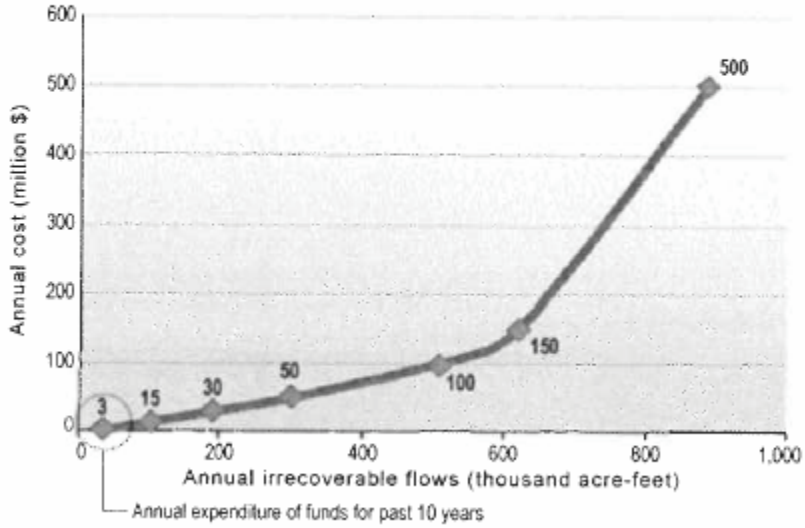
Funding assumptions are based on implementation costs of not locally cost-effective efficiency measures and are not divided between local and public funding.

Source: Water Use Efficiency Comprehensive Evaluation. CALFED Bay-Delta Program Water Use Efficiency Element Final Report (CALFED, 2006). The CALFED report is an updated analysis to the CALFED Bay-Delta Program Water Use Efficiency Element

Note: Detailed tables in the 2006 Comprehensive Evaluation included estimates of non-essential evaporation that should have been removed for the final report. The estimates in the summary table (2.3 of the final report) were correct and are duplicated in Table 2.2 here.

<u>Source</u>: California Water Plan, Update 2009, Chapter 2—Agricultural Water use Efficiency

Figure 2-2. Investment levels and associated reduction of irrecoverable flows anticipated from state/federal agencies



Source: California Water Plan, Update 2009, Chapter 2—Agricultural Water use Efficiency

Table 2- 3 Projects funded through water use efficiency grant cycles

Funding source	Projects funded	State share (in millions)
SB 23	23	$6.0
Prop. 13 allocations in 2001	5	$0.5
Prop. 13 allocations in 2002	8	$0.7
Prop. 13 allocations in 2003	0	$0
Prop. 50 allocations in 2004		
Implementation	11	$6.1
Non-Implementation	16	$3.9
Prop. 50 allocations in 2007		
Implementation	6	$6.9
Non-Implementation	15	$2.1
Total funds committed (from 2000 through 2007)		**$25.2**
Prop. 50* allocations in 2008	Funds on hold	$15

*2008 Proposal Solicitation Package is in progress for $20.3 million for agricultural water use efficiency projects.

ATTACHMENTS

Pertinent Excerpts from Sen. Bill No. 7,
2009-2010 7th Ex. Sess.

Pertinent Excerpts from Sen. Bill No. 7, 2009-2010 7th Ex. Sess.

Water Code § 10608.12 ("Definitions"), subd. (a)

"Agricultural water supplier" means a water supplier, either publicly or privately owned, providing water to **10,000 or more irrigated acres**, excluding recycled water. "Agricultural water supplier" includes a supplier or contractor for water, regardless of the basis of right, that distributes or sells water for ultimate resale to customers. "Agricultural water supplier" does not include the department.

Water Code, § 10608.12 ("Definitions"), subd. (k)

"Locally cost effective" means that the present **value of the local benefits** of implementing an agricultural efficiency water management practice is **greater than or equal to** the present **value of the local cost of implementing that measure**.

Water Code, § 10608.48. Agricultural water supplier to implement efficient water management practices

(a) On or before July 31, 2012, an agricultural water supplier shall implement efficient water management practices pursuant to subdivisions (b) and (c).

(b) Agricultural water suppliers **shall implement** all of **the following critical efficient management practices**:

(1) Measure the volume of water delivered to customers with sufficient accuracy to comply with subdivision (a) of Section 531.10 and to implement paragraph (2).

(2) Adopt a pricing structure for water customers based at least in part on quantity delivered.

(c) Agricultural water suppliers **shall implement additional efficient management practices**, including, but not limited to, practices to accomplish all of the following, **if the measures are locally cost effective and technically feasible**:

(1) Facilitate alternative land use for lands with exceptionally high water duties or whose irrigation contributes to significant problems, including drainage.

(2) Facilitate use of available recycled water that otherwise would not be used beneficially, meets all health and safety criteria, and does not harm crops or soils.

(3) Facilitate the financing of capital improvements for on-farm irrigation systems.

(4) Implement an incentive pricing structure that promotes one or more of the following goals:

(A) More efficient water use at the farm level.

(B) Conjunctive use of groundwater.

(C) Appropriate increase of groundwater recharge.

(D) Reduction in problem drainage.

(E) Improved management of environmental resources.

(F) Effective management of all water sources throughout the year by adjusting seasonal pricing structures based on current conditions.

(5) Expand line or pipe distribution systems, and construct regulatory reservoirs to increase distribution system flexibility and capacity, decrease maintenance, and reduce seepage.

(6) Increase flexibility in water ordering by, and delivery to, water customers within operational limits.

(7) Construct and operate supplier spill and tailwater recovery systems.

(8) Increase planned conjunctive use of surface water and groundwater within the supplier service area.

(9) Automate canal control structures.

(10) Facilitate or promote customer pump testing and evaluation.

(11) Designate a water conservation coordinator who will develop and implement the water management plan and prepare progress reports.

(12) Provide for the availability of water management services to water users. These services may include, but are not limited to, all of the following:

(A) On-farm irrigation and drainage system evaluations.

(B) Normal year and real-time irrigation scheduling and crop evapotranspiration information.

(C) Surface water, groundwater, and drainage water quantity and quality data.

(D) Agricultural water management educational programs and materials for farmers, staff, and the public.

(13) Evaluate the policies of agencies that provide the supplier with water to identify the potential for institutional changes to allow more flexible water deliveries and storage.

(14) Evaluate and improve the efficiencies of the supplier's pumps.

(d) Agricultural water suppliers shall include in the agricultural water management plans required pursuant to Part 2.8 (commencing with Section 10800) a report on which efficient water management practices have been implemented and are planned to be implemented, an estimate of the water use efficiency improvements that have occurred since the last report, and an estimate of the water use efficiency improvements estimated to occur five and 10 years in the future. **If an agricultural water supplier determines that an efficient water management practice is not locally cost effective or technically feasible, the supplier shall submit information documenting that determination.**

(e) The data shall be reported using a standardized form developed pursuant to Section 10608.52.

Water Code, § 10608.52. Single standardized water use reporting form

(a) The department, in consultation with the board, the California Bay-Delta Authority or its successor agency, the State Department of Public Health, and the Public Utilities Commission, shall develop a single standardized water use reporting form to meet the water use information needs of each agency, including the needs of urban water suppliers that elect to determine and report progress toward achieving targets on a regional basis as provided in subdivision (a) of Section 10608.28.

(b) At a minimum, the form shall be developed to accommodate information **sufficient to assess** an urban water supplier's compliance with conservation targets pursuant to Section 10608.24 and **an agricultural water supplier's compliance with implementation of efficient water management practices pursuant to subdivision (a) of Section 10608.48.** The form shall accommodate reporting by urban water suppliers on an individual or regional basis as provided in subdivision (a) of Section 10608.28.

Water Code, § 10608.64. Quantification of efficiency of agricultural water use

The department, in consultation with the Agricultural Water Management Council, academic experts, and other stakeholders, shall develop a methodology for quantifying the efficiency of agricultural water use. Alternatives to be assessed shall include, but not be limited to, determination of efficiency levels based on crop type or irrigation system distribution uniformity. **On or before December 31, 2011**, the department shall report to the Legislature on a proposed methodology and a plan for implementation. The plan shall include the estimated implementation costs and the types of data needed to support the methodology. Nothing in this section authorizes the department to implement a methodology established pursuant to this section.

Water Code, § 10820. Preparation and adoption of water management plan

(a) An agricultural water supplier **shall prepare and adopt** an agricultural water management plan in the manner set forth in this chapter **on or before December 31, 2012**, and **shall update that plan on December 31, 2015, and on or before December 31 every five years thereafter**. […]

Water Code, § 10826. Requirements of agricultural water management plan

An agricultural water management plan **shall be adopted** in accordance with this chapter. The plan **shall do all of the following**:

(a) Describe the agricultural water supplier and the service area, including all of the following:

(1) Size of the service area.

(2) Location of the service area and its water management facilities.

(3) Terrain and soils.

(4) Climate.

(5) Operating rules and regulations.

(6) Water delivery measurements or calculations.

(7) Water rate schedules and billing.

(8) Water shortage allocation policies.

(b) Describe the quantity and quality of water resources of the agricultural water supplier, including all of the following:

(1) Surface water supply.

(2) Groundwater supply.

(3) Other water supplies.

(4) Source water quality monitoring practices.

(5) Water uses within the agricultural water supplier's service area, including all of the following:

(A) Agricultural.

(B) Environmental.

(C) Recreational.

(D) Municipal and industrial.

(E) Groundwater recharge.

(F) Transfers and exchanges.

(G) Other water uses.

(6) Drainage from the water supplier's service area.

(7) Water accounting, including all of the following:

(A) Quantifying the water supplier's water supplies.

(B) Tabulating water uses.

(C) Overall water budget.

(8) Water supply reliability.

(c) Include an analysis, based on available information, of the effect of climate change on future water supplies.

(d) Describe previous water management activities.

(e) Include in the plan the water use efficiency information required pursuant to Section 10608.48.

Water Code, § 10853. Applicability to agricultural water supplier that provides water to less than 25,000 irrigated acres

An agricultural water supplier that provides water to **less than 25,000 irrigated acres**, excluding recycled water, shall not be required to implement the requirements of this part or Part 2.55 (commencing with Section 10608) **unless sufficient funding has specifically been provided to that water supplier for these purposes.**